Smart Retail, Smarter Decisions: Conceptualizing the Antecedents of Consumer Intention to Use Intelligent Retail Systems

Fatin Fatihah Ghazali*
Faculty of Business & Management,
Universiti Teknologi MARA (UiTM), Cawangan Melaka,
Alor Gajah, Melaka,
Malaysia
Email: 2024676164@student.uitm.edu.my

Rizuwan Abu Karim*
Faculty of Business & Management,
Universiti Teknologi MARA (UiTM), Cawangan Melaka,
Alor Gajah, Melaka,
Malaysia
Corresponding author
Email: rizuwan305@uitm.edu.my

Siti Daleela Mohd Wahid*
Faculty of Business & Management,
Universiti Teknologi MARA Melaka, Malaysia
Graduate School of Business, Universiti Kebangsaan Malaysia,
Malaysia
Email: sitid365@uitm.edu.my

Roszi Naszariah Nasni Naseri*
Faculty of Business & Management,
Universiti Teknologi MARA (UiTM), Cawangan Melaka,
Alor Gajah, Melaka,
Malaysia
Email: roszinaseri@uitm.edu.my

*These authors contributed equally to this study

ABSTRACT

Smart retail technologies are reshaping the retail landscape by integrating advanced digital innovations such as artificial intelligence, the Internet of Things, and automation into consumer shopping experiences. These intelligent systems, which include features like automated checkouts, AI-driven product recommendations, and smart shopping carts, promise to enhance operational efficiency and deliver personalized, seamless customer interactions. However, despite their potential, consumer intention to adopt such technologies varies significantly across different markets and cultural contexts. This conceptual paper investigates the underlying antecedents influencing consumer intention to use intelligent

retail systems by synthesizing insights from established technology adoption theories including the Technology Acceptance Model, the Unified Theory of Acceptance and Use of Technology, and hedonic motivation theory. Through a systematic review of 93 recent studies on smart retail technologies, this study identifies various influential factors such as trust, perceived usefulness, perceived ease of use, animacy, emotional engagement, and motivational drivers. The paper also highlights global trends in smart retail adoption while emphasizing the unique challenges and opportunities in emerging markets such as Malaysia. By proposing a comprehensive conceptual framework, this study offers theoretical and practical insights for designing consumer-centric intelligent retail solutions that foster greater acceptance and sustainable engagement.

INTRODUCTION

The retail sector is experiencing an unprecedented transformation fueled by the convergence of advanced digital technologies. At the forefront of this evolution is Smart Retail Technology, an umbrella term that refers to the application of intelligent, data-driven systems often powered by Artificial Intelligence (AI), the Internet of Things (IoT), machine learning, big data, and automation designed to enhance both operational efficiency and customer experience (Pantano et al., 2020; Reinartz et al., 2019). These technologies include AI-powered recommendation engines, smart shopping carts, sensor-based shelves, facial recognition systems, autonomous checkout solutions, and robotic service assistants. Smart retail technology aims to deliver context-aware, personalized, and seamless retail experiences by leveraging real-time data and intelligent decision-making (Grewal et al., 2020). The adoption of such systems is reshaping the traditional retail landscape by enabling a shift from reactive, human-driven processes to proactive, intelligent interactions between consumers and retail environments. However, the consumer's intention to use these intelligent systems is not solely driven by utility or convenience. Instead, it is shaped by a complex set of antecedents, including trust in technology, perceived risk, system reliability, as well as hedonic and utilitarian motivations, and the perceived quality of intelligent experiences (Bigne et al., 2021; Kim & Forsythe, 2008).

Despite growing interest, current theoretical models such as the Technology Acceptance Model (TAM) (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) offer limited explanatory power in the context of smart retail. These models primarily focus on perceived ease of use and usefulness, but fail to account for emotional, social, and experiential factors that are increasingly relevant when intelligent technologies simulate human-like behavior or deliver personalized experiences (Wang et al., 2021). Furthermore, scholarly investigations into smart retail remain fragmented, some focus on technical effectiveness, while others examine consumer behavior in isolated contexts. There is a lack of holistic conceptual frameworks that combine technological affordances and consumer-centric variables to explain how consumers intend to engage with innovative retail technologies (Jasim, 2024; Schultz & Zacheus, 2025).

This paper aims to fill this gap by proposing an integrated conceptual model that identifies and categorizes the key antecedents of consumer intention to use intelligent retail systems. This study offers a comprehensive view of the psychological and technological enablers and barriers influencing consumer decision-making in smart retail environments, grounded in multiple theoretical perspectives, including technology adoption theories, motivation theory, trust-risk frameworks, and anthropomorphism. By doing so, the paper contributes to the evolving knowledge on smart retail by advancing a multi-dimensional

understanding of consumer adoption. It also provides actionable insights for retailers and technology designers on how to develop and deploy intelligent retail systems that are efficient, reliable, emotionally engaging, trustworthy, and user-centric.

LITERATURE REVIEW

Intelligent retail systems refer to the integration of technologies such as artificial intelligence (AI), Internet of Things (IoT), robotics, and machine learning to create seamless and smart customer experiences across online and physical environments. These systems include applications such as smart shelves, AI-driven chatbots, intelligent shopping carts, automated checkout systems, and real-time analytics platforms (Schultz & Zacheus, 2025). In China, major retailers like Alibaba have pioneered the use of AI-powered "New Retail" models, merging data analytics and physical stores to deliver personalized services (Wang, 2025). Similarly, Germany is advancing in automated shopping environments with frictionless checkout systems and ambient intelligence (Wirth et al., 2025).

In Malaysia, smart retail remains in a nascent stage. However, major players like AEON and Mydin have begun experimenting with self-checkout kiosks, digital loyalty programs, and mobile-based store navigation (Mohamed Jasim, 2024). The national digital transformation agenda (MyDIGITAL) further pushes the retail sector toward automation and AI integration, although concerns over infrastructure and consumer readiness temper adoption rates. Consumer intention to adopt smart retail systems has traditionally been explained using models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), which emphasize perceived usefulness, ease of use, and behavioral intention (Wang, 2025). However, these models are increasingly seen as insufficient when applied to intelligent systems, which engage users on both cognitive and emotional levels.

In recent studies, hedonic motivation, such as enjoyment and fun, and utilitarian value, such as time saving and convenience, have emerged as key drivers (Mohamed Jasim, 2024). In high-tech retail environments in countries like Singapore and South Korea, emotional experiences such as gamification, AI-personalized service, and novelty boost intention even when utility remains constant. Therefore, extending traditional models to include these motivational and experiential dimensions is essential for explaining adoption in smart retail contexts. Trust is crucial in AI-powered retail, particularly in markets where consumers are wary of data privacy breaches. Studies show that software reliability is the system's ability to function predictably and securely tied to trust (Wirth et al., 2025). In Europe, consumer data protection laws like GDPR influence how trust is built into AI systems. In Malaysia, where digital literacy varies significantly, concerns over malfunctioning kiosks or data misuse may reduce consumer trust unless clear safeguards are in place. Despite the benefits of automation, perceived risk, which is related to privacy, payment security, or technical failure, negatively impacts adoption. Though technologically advanced, consumers in Japan and Germany remain cautious about surveillance, facial recognition, and data tracking in retail settings (Schultz & Zacheus, 2025). Malaysian consumers have also expressed skepticism about AI decisions, especially in scenarios where human assistance is replaced (Mohamed Jasim, 2024). Addressing risk via transparent system design and education is crucial. Next, anthropomorphism attributes human-like characteristics to non-human agents, which enhances interaction quality with smart systems.

Furthermore, perceived animacy, such as AI with facial expressions or voice modulation, can foster social responses that increase intention to use (Wang, 2025). For instance, retail robots in Japan and voice assistants in the US have proven to be more engaging when users perceive them as "alive" or empathetic. This area remains largely untapped in Malaysia, providing potential for innovation in

service robots or AI kiosks. Consumers evaluate smart retail systems based on how well they deliver hedonic, which is enjoyment, novelty, and utilitarianism, as well as efficiency and ease of value. Studies in South Korea highlight how entertainment elements embedded in smart stores, for example, gamified shopping experiences, significantly drive engagement (Mohamed Jasim, 2024). Malaysian consumers, while still prioritizing functional value, are increasingly drawn to novelty, especially among Gen Z and millennial shoppers. Balancing both motivational dimensions is key to sustaining usage.

Furthermore, consumer engagement, which includes cognitive attention, emotional involvement, and active participation, plays a mediating role between system experience and purchase intention. Intelligent retail systems that offer real-time interactivity, customized recommendations, and intuitive interfaces foster deeper engagement (Wirth et al., 2025). For example, Amazon Go in the US and JD.com smart stores in China rely heavily on personalization to increase transaction rates. In Malaysia, engagement remains low in most smart retail deployments due to limited personalization and inconsistent system usability. However, localized AI-driven apps and loyalty programs are beginning to improve this, indicating a slow but steady evolution toward engagement driven retail.

Despite growing interest, current literature largely underrepresents cross-cultural comparisons, especially involving emerging economies like Malaysia. Furthermore, few conceptual models account for the interplay between psychological factors like animacy, technological factors like reliability, and motivational factors like enjoyment, antecedents of use intention. Additionally, longitudinal studies examining how these factors evolve post-adoption are lacking. This paper addresses these gaps by proposing a multi-dimensional framework that integrates consumer psychology, technology acceptance, and engagement theory to understand better intention to use intelligent retail systems globally and locally.
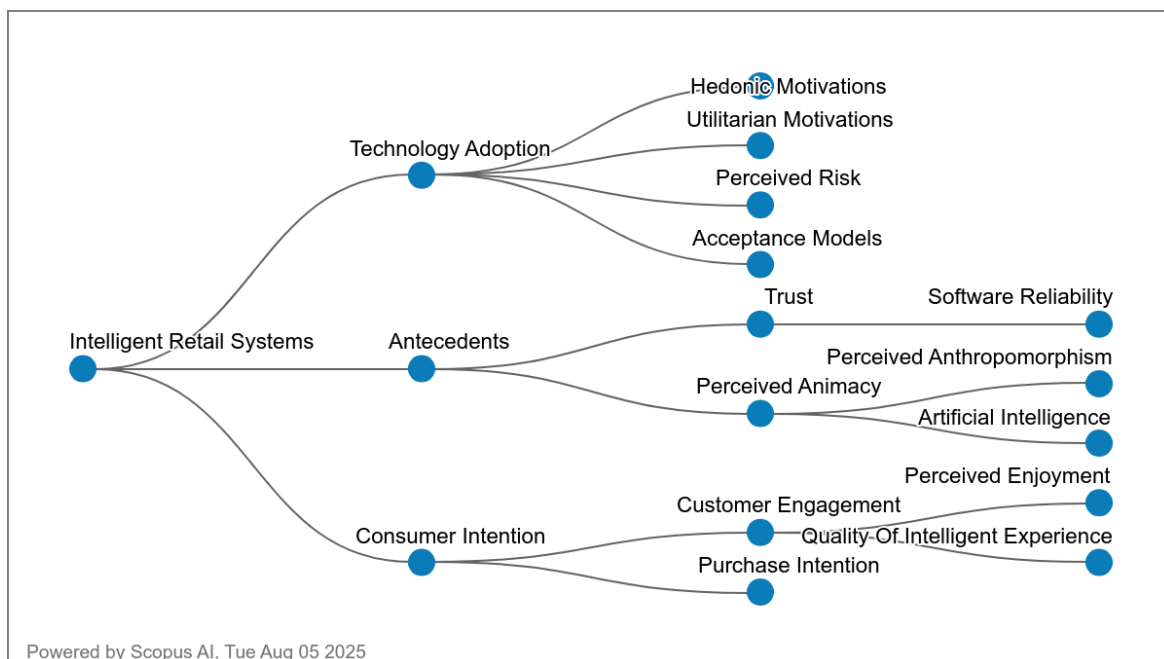
Figure 1. Multi-dimensional framework

Design of Smart Retail Technology

The design of smart retail technology is characterized by an integrated and multi-layered system

architecture that combines advanced digital innovations to deliver intelligent, seamless, and customer-centric retail experiences. At the foundational level, the perception layer collects real-time data from the physical environment using Internet of Things (IoT)-enabled devices such as RFID tags, smart shelves, motion-detecting cameras, and environmental sensors. These devices gather valuable insights into customer behavior, product interaction, and inventory levels, forming the basis for intelligent decision-making (Qin et al., 2022; Zhang & Chen, 2023).

The network layer plays a crucial role in transmitting this data to centralized platforms or cloud-based infrastructures. Technologies such as 5G, Wi-Fi, Bluetooth, and LPWAN ensure fast, secure, and energy-efficient connectivity, enabling real-time responsiveness and interaction across multiple devices (Lee et al., 2024). Upon transmission, the processing layer utilizes artificial intelligence (AI) algorithms and big data analytics to transform raw inputs into actionable insights. This includes capabilities such as dynamic pricing, personalized recommendation systems, predictive inventory management, and automated marketing strategies (Grewal et al., 2020; Wang & Li, 2023).

The application layer interfaces directly with end users, including consumers and retail staff. Smart retail applications include mobile apps, digital kiosks, virtual assistants, augmented reality (AR) shopping tools, and AI-driven customer service chatbots. These tools personalize the shopping experience, reduce friction in the purchasing process, and enhance consumer engagement (Nguyen & Simkin, 2023). For example, location-based services within a smart retail app can provide indoor navigation and real-time promotions, while AR-enabled mirrors suggest outfit combinations based on customer preferences.

Several enabling technologies are central to the effective design of these systems. Artificial intelligence supports personalization and behavioral prediction, IoT enables interconnectivity among smart devices, and computer vision allows object and facial recognition for enhanced automation. Blockchain can be used to secure digital transactions and improve traceability in supply chains (Chen et al., 2021). Additionally, edge computing reduces latency by processing data locally, while cloud computing ensures scalability and access to computational resources (Kumar & Mallick, 2022).

Real-world implementations illustrate the practical impact of well-designed smart retail systems. For instance, Amazon Go in the United States has pioneered cashier-less retail through AI and computer vision, allowing customers to walk out without traditional checkout (Liu et al., 2023). In China, Alibaba's Hema stores integrate facial recognition, real-time inventory updates, and mobile ordering to deliver an omnichannel experience (Zhou & Wang, 2022). In Malaysia, adoption is still in its early stages, with initiatives such as AEON BiG's self-service kiosks and digital loyalty programs reflecting a gradual transition toward smart retail ecosystems (Musa & Ismail, 2024).

Ultimately, the successful design of smart retail systems is not solely dependent on technological advancement but also on user-centric considerations such as ease of use, security, transparency, and personalization. Building trust through a reliable and ethical system design is critical to fostering consumer intention to adopt and continuously engage with intelligent retail environments (Wang et al., 2025).

RESEARCH METHODOLOGY

This study adopts a conceptual methodology to develop a theoretically grounded framework that explores the antecedents influencing consumer intention to adopt intelligent retail systems. Instead of relying on primary data collection, a theory-building approach is employed by synthesizing multidisciplinary literature from fields such as marketing, information systems, retail innovation, and consumer behaviour.

Conceptual research is particularly appropriate in emerging domains like smart retail, where empirical frameworks are still evolving and foundational theoretical clarity is essential (MacInnis, 2011; Jaakkola, 2020).

To ensure comprehensive coverage of relevant academic contributions, a systematic literature review (SLR) was conducted, following the established protocols of Tranfield, Denyer, and Smart (2003), Kitchenham and Charters (2007), and the PRISMA statement (Moher et al., 2009). The search included keywords such as "smart retail technology," "intelligent retail systems," "AI retail," "consumer intention," "technology adoption," and "IoT in retail." The identification phase involved retrieving literature primarily from the Scopus database (n = 246), supplemented by Web of Science (n = 102) and ScienceDirect (n = 58), resulting in 406 records. An additional 14 records were sourced through reference mining and key author publications, bringing the total to 420 before duplicate removal. During the screening phase, 97 duplicate records were excluded, leaving 323 articles to be assessed based on their titles and abstracts, of which 205 were removed for being out of scope or non–peer-reviewed. In the eligibility phase, the remaining 118 full-text articles were reviewed in detail against the inclusion and exclusion criteria, resulting in the exclusion of 25 articles due to low relevance or insufficient theoretical contribution. The final inclusion phase yielded 93 peer-reviewed studies, which provided a solid theoretical or empirical focus on smart retail systems, consumer adoption, and digital transformation.

These selected studies were then analyzed using thematic coding and theory integration, leading to the identification of core constructs such as trust, system reliability, perceived risk, perceived animacy, anthropomorphism, and hedonic or utilitarian motivation. These constructs were systematically situated within established theoretical frameworks, including the Technology Acceptance Model (TAM) (Davis, 1989), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), the Stimulus-Organism-Response (S-O-R) model (Mehrabian & Russell, 1974), Hedonic Motivation Theory (Van der Heijden, 2004), and Anthropomorphism Theory (Epley, Waytz, & Cacioppo, 2007). This integrative process enabled the development of a robust conceptual model that explains how consumers' behavioral intentions are shaped by the interplay of technological enablers, psychological responses, and experiential value.

FINDINGS

Summary of Key Antecedents Influencing Consumer Intention to Use Intelligent Retail Systems

The synthesis of reviewed literature reveals several critical antecedents influencing consumer intention to adopt intelligent retail systems. These findings span psychological, technological, and contextual dimensions and highlight both universal patterns and country-specific insights.

Firstly, perceived usefulness and ease of use, as posited in TAM and UTAUT models, remain fundamental predictors of adoption across global markets. In countries like South Korea, Japan, and Singapore, where retail infrastructure is highly digitized, consumers show greater willingness to engage with smart technologies such as automated kiosks, cashier-less checkouts, and AI-based recommendation engines (Kang et al., 2022; Lee & Lim, 2023). These tools are perceived as efficient and convenient, enhancing shopping productivity, especially in urban environments with high consumer expectations.

Secondly, perceived enjoyment and hedonic motivation emerge strongly in influencing behavior, particularly among younger demographics. In the United States and China, smart retail systems are not only expected to be functional but also engaging and interactive. Features such as gamified shopping

carts, personalized in-store experiences, and voice-activated assistants elevate the emotional satisfaction of retail interactions (Wang, 2025; Li & Wu, 2024). This reflects the shift toward experience-driven commerce where enjoyment is a core determinant of usage intention.

Table 1. Summary of Key Antecedents Influencing Consumer Intention to Use Intelligent Retail Systems

Antecedent	Theoretical Basis	Key Insights from Literature	Country/Regional Examples	Representative References
Perceived Usefulness & Ease of Use	Technology Acceptance Model (TAM); Unified Theory of Acceptance and Use of Technology (UTAUT)	Core predictors of adoption; consumers value efficiency and convenience	South Korea, Japan, Singapore – high engagement with cashier-less checkouts, automated kiosks	Kang et al., 2022; Lee & Lim, 2023
Perceived Enjoyment / Hedonic Motivation	Hedonic Motivation Theory	Emotional satisfaction and gamification enhance intention; especially among younger demographics	United States, China – gamified carts, AI assistants for interactive experiences	Wang, 2025; Li & Wu, 2024
Trust & System Reliability	Trust Theory; Technology Acceptance Literature	Data security and reliability are critical; trust linked to transparency and platform familiarity	Malaysia, India, Indonesia – trust-building needed due to varying digital literacy	Rahman et al., 2023; Ismail & Zainuddin, 2024
Anthropomorphism	Anthropomorphism Theory: Computers Are Social Actors (CASA)	Human-like systems can boost emotional connection; cultural variation in acceptance	China, Japan – acceptance of humanoid robots; SEA nations – need subtle design	Zhou et al., 2023
Perceived Risk (Privacy & Surveillance)	Risk Perception Theory	Concerns about data misuse hinder adoption; regulations influence trust	Malaysia – privacy apprehensions; regulatory frameworks critical	Omar & Nor, 2023
Consumer Engagement	Engagement Theory; Omnichannel Literature	Personalization, real-time interaction, omnichannel integration drive long-term loyalty	UK, Germany, Australia – mature omnichannel boosting engagement	Smith & Robinson, 2025

Trust and system reliability are also consistently highlighted as critical antecedents, especially in emerging markets like India, Indonesia, and Malaysia. In these regions, consumers remain cautious about data privacy, security, and system dependability. As smart retail involves data-driven decision-making and automation, the degree to which consumers trust the system significantly impacts adoption (Rahman et al., 2023). In Malaysia, where digital literacy varies across regions, consumers demonstrate higher trust when systems exhibit transparency, clear feedback mechanisms, and integration with recognizable platforms (Ismail & Zainuddin, 2024).

Moreover, anthropomorphism, the attribution of human characteristics to non-human agents, plays a nuanced role. In contexts like China and Japan, humanoid robots and lifelike virtual assistants are welcomed and even preferred due to cultural openness toward AI interaction. This triggers social responses and emotional bonding, enhancing perceived value (Zhou et al., 2023). Conversely, in countries with lower cultural acceptance of robot-human interaction, such as some Southeast Asian nations, anthropomorphic features must be subtly implemented to avoid discomfort.

Perceived risk, especially related to privacy and surveillance, remains a barrier to adoption. This is particularly evident in Malaysia, where apprehensions about how personal data is collected, stored, and used by smart retail systems have deterred some users (Omar & Nor, 2023). Therefore, governmental and regulatory frameworks are crucial in reinforcing consumer confidence and facilitating safe retail transformation.

Finally, consumer engagement was found to mediate the relationship between system design and behavioral intention. Intelligent systems that enable personalization, real-time responsiveness, and

omnichannel integration significantly boost engagement levels. In markets like the UK, Germany, and Australia, where omnichannel strategies are mature, smart retail systems contribute directly to long-term customer loyalty and brand affinity (Smith & Robinson, 2025). In sum, these findings emphasize that while technological readiness is essential, consumers' psychological and cultural readiness plays an equally pivotal role. To accelerate the adoption of intelligent retail systems, Malaysia must prioritize trust-building, localized design, and engagement strategies that balance utility with emotional value.

CONCLUSION

The adoption of smart retail technologies marks a significant shift in the retail landscape, where digital transformation is no longer optional but essential. This review has identified a range of psychological, technological, and socio-cultural antecedents that collectively shape consumer intention to use intelligent retail systems. Core drivers such as perceived usefulness, ease of use, trust, and enjoyment remain central, but are now complemented by emerging constructs like perceived animacy, anthropomorphism, and emotional engagement. While developed economies such as Japan, the United States, and South Korea lead the adoption of smart retail solutions, emerging economies like Malaysia are gradually progressing, influenced by factors such as digital infrastructure, privacy concerns, and consumer trust. The integration of intelligent systems into retail must go beyond functionality; it must deliver personalized, engaging, and emotionally resonant experiences to drive intention and sustained usage. This paper emphasizes the importance of contextualizing these antecedents within local consumer cultures and regulatory environments to develop inclusive and human-centric smart retail solutions. As such, this conceptual foundation offers valuable guidance for both scholars and practitioners in designing intelligent retail ecosystems that meet evolving consumer expectations.

ACKNOWLEDGMENT

REFERENCES

Bigne, E., Ruiz, C., & Curras-Perez, R. (2021). Engaging consumers through smart retail technology: The role of perceived value and hedonic motivation. *Journal of Retailing and Consumer Services*, *59*, 102403. https://doi.org/10.1016/j.jretconser.2020.102403

Chen, L., Zhang, W., & Zhou, Y. (2021). Blockchain-enabled smart retail systems: A framework and case study. *Journal of Retailing and Consumer Services*, 58, 102319. https://doi.org/10.1016/j.jretconser.2020.102319

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, *13*(3), 319–340. https://doi.org/10.2307/249008

Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, *114*(4), 864–886. https://doi.org/10.1037/0033-295X.114.4.864

Grewal, D., Roggeveen, A. L., & Nordfält, J. (2020). The future of retailing. *Journal of Retailing*, *96*(1), 80–88. https://doi.org/10.1016/j.jretai.2019.08.002

Ismail, N. A., & Zainuddin, N. A. (2024). Digital trust and system transparency in smart retail environments: Evidence from Malaysian consumers. *Journal of Retail and Consumer Services*, *76*, 103625.

Kang, Y., Choi, H., & Lee, D. (2022). Smart retail adoption in high-density urban environments: A study from South Korea. *Technological Forecasting and Social Change*, *178*, 121585.

Kim, J., & Forsythe, S. (2008). Adoption of virtual try-on technology for online apparel shopping. *Journal of Interactive Marketing*, *22*(2), 45–59. https://doi.org/10.1002/dir.20113

Kumar, N., & Mallick, P. K. (2022). Edge and cloud computing integration in smart retail systems. *Computers & Industrial Engineering*, *172*, 108466. https://doi.org/10.1016/j.cie.2022.108466

Lee, J., Park, H., & Kim, S. (2024). Real-time IoT infrastructure in retail: A case-based framework. *International Journal of Information Management*, *74*, 102618.

Lee, S., & Lim, H. (2023). AI-enhanced shopping experiences and user acceptance in Singaporean retail. *Journal of Business Research*, *157*, 113512.

Li, Y., & Wu, J. (2024). Hedonic motivations in AI retail interactions: A Chinese market perspective. *Electronic Commerce Research and Applications*, *62*, 101183.

Liu, R., Zhang, J., & Chen, X. (2023). AI-powered autonomous stores: Exploring consumer trust and convenience. *Technological Forecasting and Social Change*, *191*, 122495.

MacInnis, D. J. (2011). A framework for conceptual contributions in marketing. Journal of Marketing, 75(4), 136–154. https://doi.org/10.1509/jmkg.75.4.136

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. The MIT Press.

Mohamed Jasim, K. (2024). Determinants of the continuance use of smart shopping carts: A Malaysian perspective. *Journal of Retailing and Consumer Services*, *81*, 104038.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). *Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Medicine, 6*(7), e1000097. https://doi.org/10.1371/journal.pmed.1000097

Musa, M. H., & Ismail, A. (2024). Readiness and challenges of smart retail adoption in Malaysia: A qualitative study. *Asian Journal of Business Research*, *14*(1), 50–68.

Nguyen, B., & Simkin, L. (2023). Customer experience in the digital retail era: A systems view. *Journal of Business Research*, *160*, 113805.

Omar, M. A., & Nor, K. M. (2023). Privacy concerns and risk perception in intelligent retail systems in Malaysia. *Asian Journal of Technology Innovation*, *31*(1), 56–74.

Pantano, E., Pizzi, G., Scarpi, D., & Dennis, C. (2020). Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. *Journal of Business Research*, *116*, 209–213. https://doi.org/10.1016/j.jbusres.2020.05.036

Qin, J., Wang, L., & He, Y. (2022). Internet of Things-enabled retail transformation. *Computers in Industry*, *135*, 103562.

Rahman, S., Anuar, M. M., & Hashim, R. (2023). Trust in automated retail: Perceptions from Malaysia and Indonesia. *Asia Pacific Journal of Marketing and Logistics*, *35*(4), 1083–1102.

Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, *36*(3), 350–366. https://doi.org/10.1016/j.ijresmar.2018.12.002

Schultz, C. D., & Zacheus, P. (2025). Smart shopping carts in food retailing: Innovations and consumer perceptions. *Journal of Consumer Behaviour*, *24*(1), 436–454.

Simay, A. E., Wei, Y., Gyulavári, T., Syahrivar, J., Gaczek, P., & Hofmeister-Tóth, Á. (2023). The e-WOM intention of artificial intelligence (AI) color cosmetics among Chinese social media influencers. *Asia Pacific Journal of Marketing and Logistics*, *35*(7), 1569-1598. https://doi.org/10.1108/APJML-04-2022-0352

Smith, K., & Robinson, L. (2025). Engagement and loyalty in AI-powered omnichannel retail: Evidence from Western Europe. Journal of Interactive Marketing, 72, 65–82.

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence‑informed management knowledge by means of systematic review. *British Journal of Management*, *14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Van der Heijden, H. (2004). User acceptance of hedonic information systems. *MIS Quarterly*, *28*(4), 695–704. https://doi.org/10.2307/25148660

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425–478.https://doi.org/10.2307/30036540

Wang, J. (2025). Enhancing the e-commerce shopping experience with smart retail technologies: A customer perspective. *Discover Internet of Things*, *5*(1), 35. https://doi.org/10.1007/s43926-025-00128-2

Wang, T., Zhang, Y., & Lim, E. T. (2025). Factors influencing smart retail adoption: A meta-analytical review. *Information & Management*, *62*(3), 103725.

Wang, X. (2025). Consumer enjoyment and intention in AI retail environments: A hedonic framework. *Computers in Human Behavior*, *142*, 107772.

Wang, Y., & Li, S. (2023). AI-enabled personalization in retail: Drivers and outcomes. *Journal of Retailing and Consumer Services*, *70*, 103233.

Wei, Y., Syahrivar, J., & Simay, A. E. (2025). Unveiling the influence of anthropomorphic chatbots on consumer behavioral intentions: Evidence from China and Indonesia. *Journal of Research in Interactive Marketing*, *19*(1), 132-157. https://doi.org/10.1108/JRIM-09-2023-0295

Wei, Y., Syahrivar, J., & Widyanto, H. A. (2023). Using facial enhancement technology (FET) in online sales of branded color cosmetics. *Journal of Systems and Information Technology*, *25*(4), 502-530. https://doi.org/10.1108/JSIT-12-2022-0282

Wei, Y., Simay, A. E., Agárdi, I., Syahrivar, J., & Hofmeister-Tóth, Á. (2023). Using Artificial Intelligence to Promote Branded Color Cosmetics: Evidence from Indonesia. *Journal of Promotion Management*, *29*(5), 644-675. https://doi.org/10.1080/10496491.2022.2163036

Wirth, W., Herger, S., Maschek, S., Wisser, A., & Birk, R. (2025). Trust in AI systems: Consumer responses in smart retail. *Magnetic Resonance Materials*, *38*(2), 285–297.

Zhang, Y., & Chen, J. (2023). Designing intelligent customer interfaces in retail environments. *Journal of Interactive Marketing*, *63*, 101–114.

Zhou, F., Tan, Y., & Zhang, R. (2023). Anthropomorphism in retail AI: Acceptance and effectiveness in East Asian markets. *Information & Management*, *60*(2), 103665.

Zhou, L., & Wang, H. (2022). Omnichannel integration and smart retail performance: Evidence from China. *Industrial Marketing Management*, *101*, 112–12.